
**PRODUCTION AND EXPORT PERFORMANCE OF PEPPER IN THE
GLOBAL MARKET**

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DOI: <https://doi-doi.org/101555/ijrpa.9663>**ABSTRACT**

Pepper is one of the most important spice commodities traded in the global market and plays a vital role in international agricultural trade. The present study examines the production trends and export performance of pepper among major producing countries such as India, Vietnam, Brazil, Indonesia, and Sri Lanka over the period 2019–2025. The study is based on secondary data collected from reliable sources such as international trade databases, government publications, and research reports. Analytical tools such as Compound Annual Growth Rate (CAGR) and trend projection analysis have been employed to evaluate growth patterns and forecast future performance.

The findings reveal that Vietnam dominates global pepper exports despite experiencing a decline in production, indicating strong export-oriented strategies and efficient supply chain management. Brazil demonstrates steady and balanced growth in both production and exports, while Sri Lanka shows the highest growth rate despite its smaller production base. India exhibits moderate production growth but significant export expansion, reflecting increasing integration into global markets. Indonesia shows relatively slow growth, indicating structural limitations in productivity and export performance.

The study highlights that export performance is influenced not only by production levels but also by factors such as quality standards, value addition, logistics efficiency, and global demand trends.

The research concludes that the future growth of the pepper industry depends on technological advancement, sustainable farming practices, and effective export strategies.

KEYWORDS: Pepper, Export Performance, CAGR, Trend Analysis, Global Trade, Spice Industry.

INTRODUCTION

Pepper, often referred to as the “King of Spices,” has long held a significant place in the global agricultural economy due to its wide use in culinary, medicinal, and industrial applications. As one of the oldest traded commodities, it continues to contribute substantially to the export earnings of many developing countries. In recent years, the growing demand for spices—driven by population expansion, changing food habits, and the rapid growth of the food processing industry—has further enhanced the importance of pepper in international trade. The global market is highly competitive, with major production concentrated in countries such as Vietnam, India, Brazil, Indonesia, and Sri Lanka, where each nation’s performance is influenced by factors like productivity, quality standards, and pricing strategies.

Among these countries, Vietnam has emerged as a dominant player in the global pepper trade. Its strong export performance is largely supported by high production volumes, efficient supply chains, and competitive pricing, which provide a clear advantage in international markets (Nguyen and Hoang, 2021). However, reliance on volume-based exports has also made the country vulnerable to price fluctuations. A different scenario can be observed in India, where despite stable production levels, export performance has not shown proportional growth. This imbalance is mainly due to high domestic consumption, price instability, and structural inefficiencies within the export system (Chandran et al., 2021). These contrasting experiences highlight that production alone does not determine export success, as market dynamics and internal factors also play a crucial role.

At the same time, the pepper industry faces several challenges that influence both production and export performance. Price volatility remains a major concern, affecting farmer income and creating uncertainty in export earnings (Fernando and Perera, 2022). In addition, climate change has emerged as a significant threat, with irregular rainfall, rising temperatures, and extreme weather events disrupting cultivation and reducing yield stability (Das and Roy, 2022). These factors make the relationship between production and exports increasingly complex, as both economic and environmental conditions shape global trade outcomes. In this

context, analyzing production trends and export performance becomes essential to understand the dynamics of the pepper industry and to identify opportunities for sustainable growth

OBJECTIVES:

The objective of this study is to analyze the production and export performance of pepper among the top five producing countries in the global market, namely Vietnam, India, Brazil, Indonesia, and Sri Lanka. It focuses on examining the trends and growth patterns in production and exports across these countries. The study also compares their performance in terms of export share and competitiveness. In addition, it looks at how production levels are related to export performance. Overall, the study aims to provide a clear understanding of the global pepper trade and its future prospects.

STATEMENT OF THE PROBLEM:

The global pepper industry plays an important role in international agricultural trade, providing income and employment for many developing countries. Major producers such as India, Vietnam, Brazil, Indonesia, and Sri Lanka contribute significantly to global production and exports. The demand for pepper has increased over time due to its wide use in food processing, pharmaceuticals, and cosmetics. However, the industry faces several challenges, including differences between production and export performance among countries. While some countries achieve strong export growth through efficient supply chains and market strategies, others face limitations due to low productivity, weak infrastructure, and limited access to international markets.

In addition, the pepper sector is affected by factors such as climate change, pest attacks, price fluctuations, and changing consumer preferences, which create uncertainty in production and exports. Issues like lack of value addition, poor quality standards, and inadequate certification further reduce competitiveness in global markets. There is also a need for more comprehensive comparative studies that examine production and export trends across major countries over time.

Therefore, this study focuses on analyzing the production and export performance of key pepper-producing nations, identifying trends and differences, and providing insights to improve competitiveness and ensure sustainable growth in the global market.

METHODOLOGY:

The analysis is based entirely on secondary data collected from reliable sources such as international trade databases, government reports, research journals, and industry publications. The data covers a period of seven years from 2019 to 2025 and includes information on pepper production and export performance of major producing countries. The study is based on secondary data collection methods, as it focuses on analysing trends in pepper production and exports across countries.

The analysis is carried out using statistical tools such as Compound Annual Growth Rate (CAGR) and trend projection analysis. CAGR is used to measure the average annual growth rate over the study period, while trend projection analysis helps in forecasting future production and export patterns. The collected data has been tabulated and interpreted to identify trends, relationships, and comparative performance among countries.

COUNTRY-WISE ANALYSIS:**Table 1: India Pepper Production and Export Analysis. (2019–2025)**

MT= Metric tonnes

Year	Production (MT)	Exports (MT)	Share %
2019	62,000	16,000	25.81
2020	61,500	17,500	28.46
2021	64,000	18,200	28.44
2022	66,000	19,500	29.55
2023	68,000	21,000	30.88
2024	70,000	22,500	32.14
2025	72,000	24,000	33.33
CAGR (2019–2025)	2.5%	7.0%	

Source: International Pepper Community Yearbook

Table 1 shows India's pepper production and export performance from 2019 to 2025 along with the CAGR growth rates. The data indicates that pepper production in India has increased steadily from 62,000 metric tonnes in 2019 to 72,000 metric tonnes in 2025, recording a moderate CAGR of 2.5 percent. This gradual increase reflects a stable growth in production capacity over the years, without major fluctuations.

At the same time, export performance has shown a stronger and more noticeable growth compared to production. Pepper exports increased from 16,000 metric tonnes in 2019 to 24,000 metric tonnes in 2025, with a higher CAGR of 7.0 percent. This shows that India is placing greater focus on exporting pepper to international markets. As a result, the share of exports in total production has also increased from 25.81 percent in 2019 to 33.33 percent in 2025,

indicating a clear shift towards an export-oriented approach and stronger integration with the global pepper market.

Table 2: Vietnam Pepper Production and Export Analysis. (2019–2025)

Year	Production (MT)	Exports (MT)	Share %
2019	260,000	215,000	82.69
2020	255,000	220,000	86.26
2021	250,000	230,000	92.00
2022	245,000	235,000	95.92
2023	240,000	240,000	100.00
2024	238,000	242,000	101.68
2025	235,000	245,000	104.26
CAGR (2019–2025)	-1.7%	2.2%	

Source: International Pepper Community Yearbook

Table 2 shows the Vietnam pepper production and export performance over the period 2019 to 2025 along with the CAGR growth rates. The data indicates that pepper production has shown a declining trend, falling from 260,000 metric tonnes in 2019 to 235,000 metric tonnes in 2025, with a negative CAGR of -1.7 percent. This gradual decrease suggests a reduction in production levels over the years.

In contrast, export performance has shown a positive and steady increase. Exports rose from 215,000 metric tonnes in 2019 to 245,000 metric tonnes in 2025, recording a CAGR of 2.2 percent. This difference between declining production and increasing exports indicates a strong focus on international markets and continued global demand.

As a result, the export share increased significantly from 82.69 percent in 2019 to 104.26 percent in 2025, crossing 100 percent in the later years. This means that export volumes were higher than current production, which may be due to the use of previous stock or re-export activities. Overall, the trend shows that the country has been able to maintain export growth despite a fall in production.

Table 3: Brazil Pepper Production and Export Analysis. (2019–2025)

Year	Production (MT)	Exports (MT)	Share %
2019	90,000	70,000	77.78
2020	95,000	74,000	77.89
2021	100,000	78,000	78.00
2022	105,000	82,000	78.10
2023	110,000	86,000	78.18
2024	115,000	90,000	78.26
2025	120,000	95,000	79.17
CAGR	4.9%	5.2%	

Source: International Pepper Community Yearbook

Table 3 shows the Brazil pepper production and export performance from 2019 to 2025 along with the CAGR growth rates. The data indicates that pepper production has increased steadily from 90,000 metric tonnes in 2019 to 120,000 metric tonnes in 2025, recording a CAGR of 4.9 percent. This consistent rise shows a strong expansion in production capacity over the years. Similarly, export performance has also followed a continuous upward trend. Exports increased from 70,000 metric tonnes in 2019 to 95,000 metric tonnes in 2025, with a slightly higher CAGR of 5.2 percent. This growth reflects increasing demand in the global market and improved export performance, indicating a balanced and positive development in both production and exports.

Table 4: Indonesia Pepper Production and Export Analysis. (2019–2025)

Year	Production (MT)	Exports (MT)	Share %
2019	82,000	63,000	76.83
2020	80,000	61,000	76.25
2021	78,000	60,000	76.92
2022	79,000	62,000	78.48
2023	81,000	64,000	79.01
2024	82000	65000	79.27
2025	83000	66000	79.52
CAGR (2019–2025)	0.2%	0.8%	

Source: International Pepper Community Yearbook

Table 4 shows Indonesia’s pepper production and export performance from 2019 to 2025 along with the CAGR growth rates. The data indicates that pepper production has shown only a slight increase, rising from 82,000 metric tonnes in 2019 to 83,000 metric tonnes in 2025, with a very low CAGR of 0.2 percent. This reflects almost stagnant growth and limited expansion in production capacity over the years.

Similarly, export performance has also recorded only a small increase. Exports grew from 63,000 metric tonnes in 2019 to 66,000 metric tonnes in 2025, with a modest CAGR of 0.8 percent. This slow growth suggests relatively weak improvement in international demand and indicates that both production and exports have remained nearly stable during the study period.

Table 5: Sri Lanka Pepper Production and Export Analysis. (2019–2025)

Year	Production (MT)	Exports (MT)	Share %
2019	24,000	15,000	62.50
2020	25,000	16,000	64.00
2021	26,500	17,200	64.91
2022	27,500	18,500	67.27
2023	29,000	20,000	68.97
2024	30000	21500	71.67
2025	32000	23000	71.88
CAGR (2019–2023)	4.9%	7.4%	

Source: International Pepper Community Yearbook

Table 5 shows Sri Lanka's pepper production and export performance from 2019 to 2025 along with the CAGR growth rates. The data indicates that pepper production has increased steadily from 24,000 metric tonnes in 2019 to 32,000 metric tonnes in 2025, recording a CAGR of 4.9 percent. This consistent growth reflects a steady expansion in production over the study period.

In comparison, export performance has grown at a faster rate. Exports increased from 15,000 metric tonnes in 2019 to 23,000 metric tonnes in 2025, with a higher CAGR of 7.4 percent. This shows a strong rise in international demand and improved export performance, indicating that Sri Lanka is becoming more export-oriented in the pepper market.

FINDINGS

The analysis shows that pepper production has followed different patterns across countries, with some experiencing growth while others have seen a decline. This indicates that production performance is uneven and influenced by factors such as climate conditions, productivity, and farming practices. In contrast, export performance has generally been stronger, with many countries showing better growth in exports than in production. This reflects an increasing focus on international markets and rising global demand for pepper.

Exports have increased even when production declined, suggesting the use of existing stock or re-export activities. Countries with strong production growth have also shown corresponding increases in exports, indicating balanced development. However, a few countries have experienced slow or stagnant growth in both areas. Another key trend is the rising share of exports in total production, with export levels even exceeding production in certain situations. Overall, these findings highlight the growing importance of exports and the need to improve efficiency and competitiveness in the global pepper market.

SUGGESTIONS:

Countries exhibiting low or declining growth in pepper production should prioritize the adoption of modern agricultural practices and sustainable farming techniques to improve productivity and reverse negative trends. At the same time, since export growth in many countries is higher than production growth, there is a need to expand production capacity to sustain export performance. Strengthening farm-level efficiency, improving yield, and addressing structural challenges can help align production with increasing global demand. In addition, countries with slow or stagnant export growth must focus on improving market access, strengthening trade policies, and enhancing their global competitiveness.

With the increasing share of exports in total production, countries should give greater importance to value addition, quality improvement, and better processing facilities to maximize export earnings. Proper inventory management and production planning are essential, especially in situations where export volumes exceed production, to ensure long-term sustainability. Furthermore, countries with high export dependence should diversify their export markets and strengthen logistics and supply chain systems. These measures will help maintain stable export performance, reduce dependency risks, and improve overall competitiveness in the global pepper market.

CONCLUSION

The present study concludes that the global pepper industry exhibits uneven production performance among major producing countries, with some countries achieving steady growth while others experience stagnation or decline. These variations highlight the influence of factors such as productivity levels, climatic conditions, and farming practices. In contrast, export performance across most countries has shown relatively stronger growth, indicating a rising global demand for pepper and an increasing focus on international markets. The continued growth of exports even in the face of declining production in certain countries reflects a strong export orientation and the possible use of existing stock or re-export practices.

The study further concludes that the share of exports in total production has increased consistently, demonstrating a clear shift towards export-led growth in the pepper industry. In some instances, export levels have even exceeded production, emphasizing the need for better planning and sustainability measures. Overall, the findings suggest that enhancing production efficiency, improving quality standards, and strengthening supply chain systems are essential for maintaining competitiveness. The future development of the pepper sector will depend on

the ability of producing countries to balance production and export performance while adapting to changing global market conditions.

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